School Shop

vol. VII no. 5

JANUARY, 1948

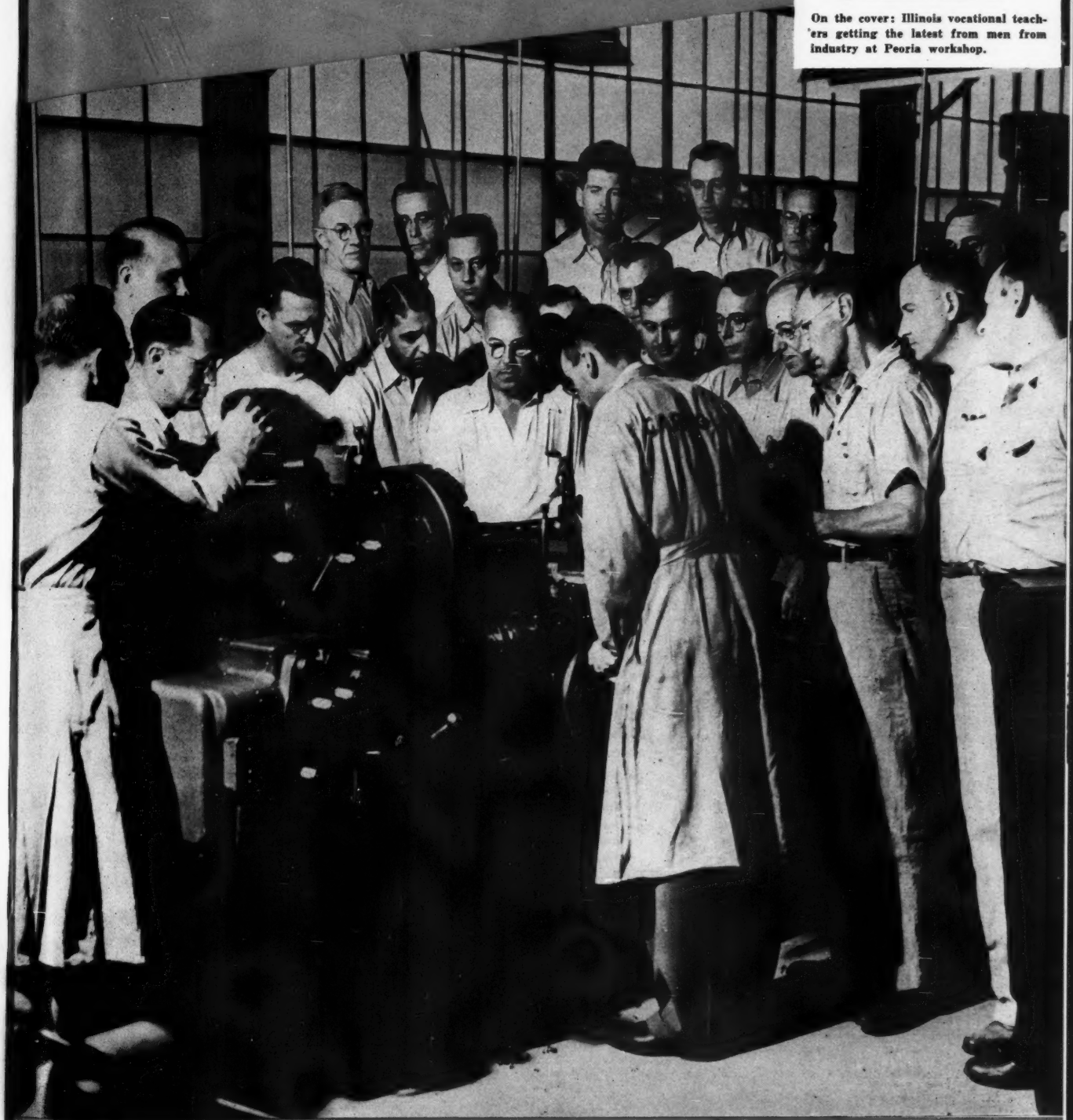
Teaching General Information
by Charles H. Sechrest

Bench Vise
by Pickerrell and Barkes

Aluminum Postal Scale
by Clarence A. June

Unique Ink-Bottle Holder
by Arthur F. Schuster

On the cover: Illinois vocational teachers getting the latest from men from industry at Peoria workshop.



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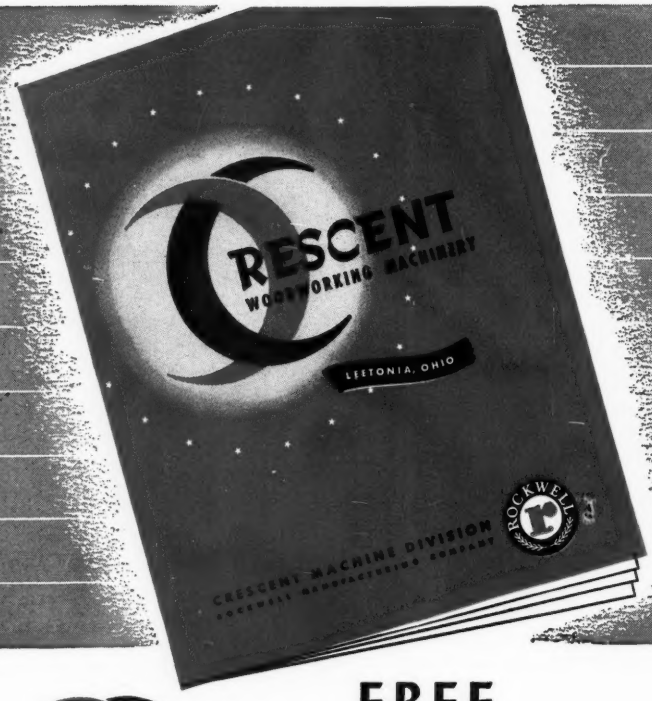

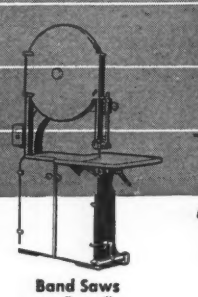

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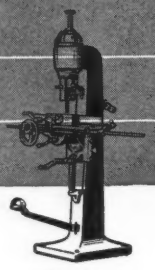

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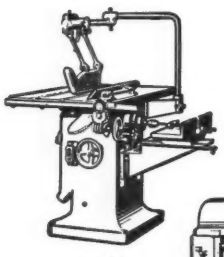

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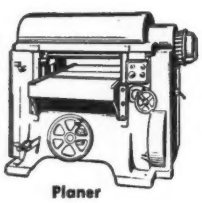

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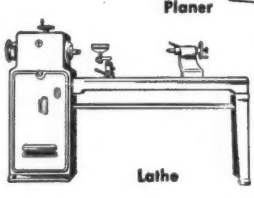

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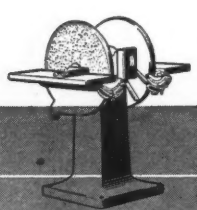

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School Shop

FOR INDUSTRIAL EDUCATION TEACHERS

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School Shop TALK

COMMENTS ON ISSUES FACING INDUSTRIAL EDUCATION

Uniformity at a Price

Every so often someone comes up with the notion that it would be splendid if there were more standardization in certification and teacher-training procedures in the trade and industrial education field. This could be a vicious move.

Apparently there would be much more convenience in an arrangement whereby every state had the same certification requirements and every teacher-training institution had the same courses and the same curriculum content. Teachers and students moving from one state or institution to another would find the move much less troublesome from the standpoint of credits and certificates. But there the advantage of such a centralized system seems to end and a number of serious disadvantages appear.

Any state department of vocational education and any teacher-training institution worthy of the name attempts to adapt its procedures to the area which it serves. If it is hemmed in by directives from Washington, the freedom to adapt is lost. Some problems might be the same in a state in the northwest part of the nation as in a state in the southeastern section, but by and large each state has peculiar problems of its own that require answers that fit its particular need.

In addition, the standardization of procedures would constrict the state or institution interested in developing new technics. Educational progress is made through experimentation. If the power to experiment is denied those agencies directly concerned with the answer, much valuable progress would be lost.

Like the Fourth of July political orator, mention should be made of the Constitution of the United States. Under the famous provision that powers not specifically granted to the federal government are delegated to the states, education has always been a responsibility of states. The only effective and certain way to achieve standardization in certification and teacher training among the states is by federal directive. The voice of rebellion would be heard in the land if Washington officialdom issued such a decree. (And it is our opinion that no federal official would be interested in making such a move.)

. The objective of certification, and teacher training leading to it, is the provision of good instruction for the student. All agencies can agree on that. In fact, it is easy to agree on the general objectives of vocational education which are to provide instruction of less than college grade for persons over 14 years of age to fit them for useful employment or to increase the skills and related knowledge of employed workers and to increase the vocational and civic intelligence of young workers.

When means are considered to achieve these objectives, the differences begin to appear. Many of them can be resolved through the discussions of such organizations as the National Association of Vocational Teacher Trainers. By such procedures forward progress is made, but local autonomy is preserved. Let's stay away from complete and total uniformity.

Sure There Is Time

Occasionally one hears an industrial-arts teacher complain that he cannot give more time to the information side of his teaching because it takes so long for his students to gain skills that there is no time left for the giving of information. Skill standards should not be lowered, he pontificates, so all "that related stuff" will have to be forgotten or the social-studies teacher will have to do the job.

Master teachers of industrial arts will string along with him that skill standards should not be lowered. Part of learning is learning to do a thing well. But they will disagree that there isn't time for related information. The difference comes in the efficiency of instruction of the master teacher and the inefficiency in the teaching of the pedestrian teacher.

The master teacher has a sound sense of the value of his instructional procedures and uses them efficiently. Teaching practices that fail to raise that well-known gleam in the eye of the student are abandoned. Those that produce it are used to good effect.

There is time for the information side, but the skill side has to be taught efficiently first. The master teacher weaves both aspects into his instructional procedure so the pupil gets full value from industrial arts training.

Your Editor

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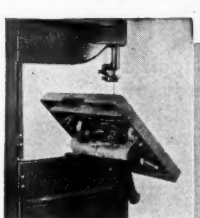

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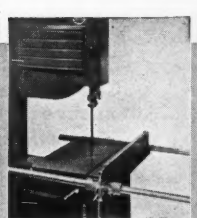
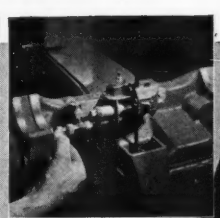


Heavily-ribbed table is slotted to accommodate miter gage. It is also adaptable to use of a rip fence, as shown.



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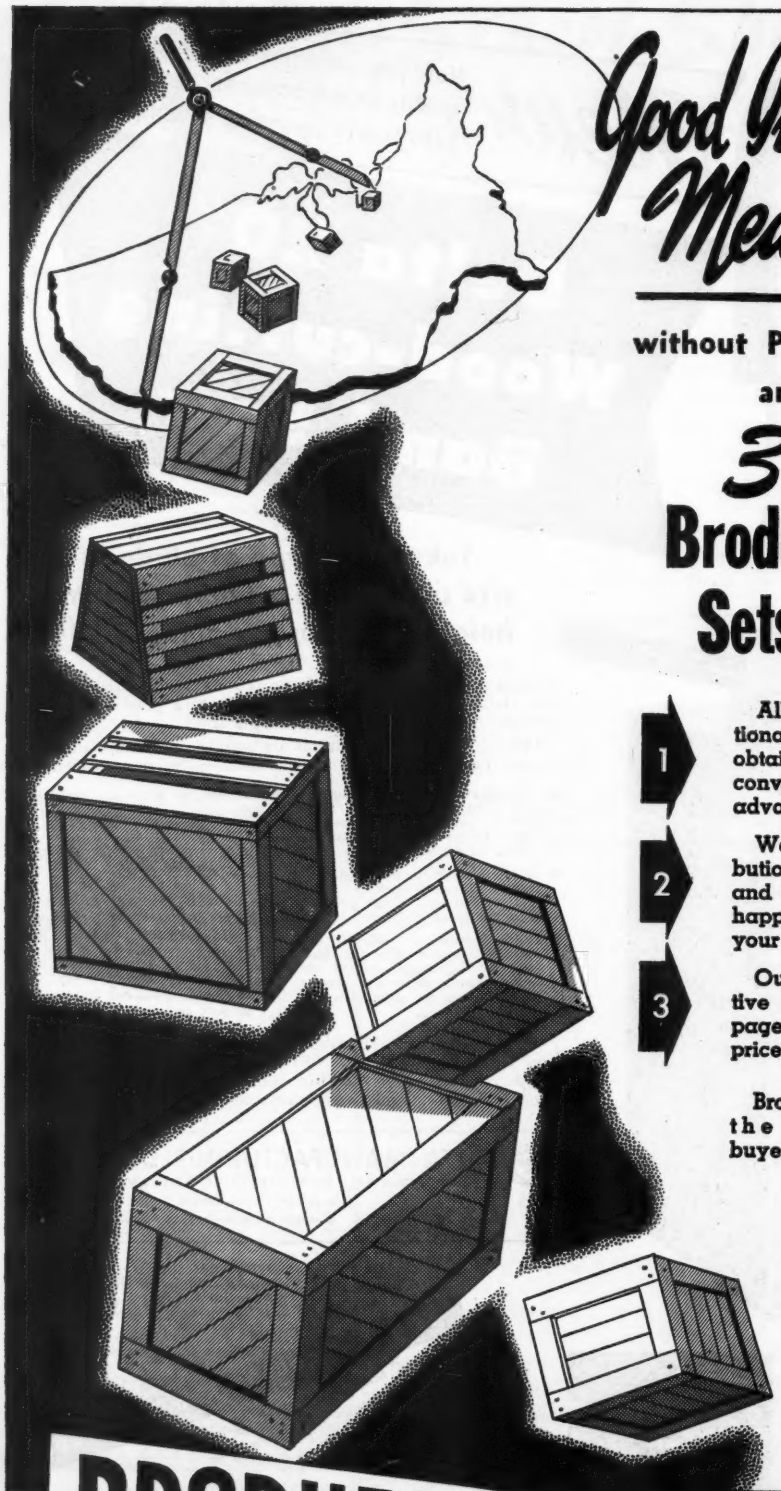

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A Method for Teaching General Information in Industrial Arts

BY *Charles H. Sechrest*

A major objective of industrial arts is the development in the pupil of an understanding of industry and its products. Here the author describes a technic for presenting this important information. Charles H. Sechrest teaches in the Detroit, Michigan, Public Schools.

ONE of the purposes of industrial arts as a part of general education is to develop an interest in, and an understanding of, industry, its products and its processes. This interest and understanding may be developed by various methods. Visits to the industries located in the community may be organized. Men from industry may be invited to the school to speak to classes. A third method is through the use of commercial films and slides. Another method is through the use of exhibits and literature furnished by various manufacturers. Still another method of developing an interest in, and an understanding of, industry is through talks by the teacher. It is with this last method that this article is chiefly concerned.

These "talks," "lectures," or "information lessons" must be carefully planned and presented in the most interesting manner possible. The success of the lesson depends a great deal on the presentation of it. No matter how interesting the subject may be, a poor presentation of it will doom it to failure. The most common material or product has a fascinating history and an interesting process of manufacture.

A series of information lessons may be prepared concerning the common materials and tools used in the home as well as in the school shop. A lesson dealing with the history, use, and manufacture of wire, steel wool, wire nails, and wood screws makes an interesting as well as informative lesson. Such a lesson is described under the name "Products of Wire." It is a teaching plan or lesson plan to be used by the teacher in the presentation of the lesson. In Figure 1 is shown an assortment of wire nails, wood screws, and other wood fasteners to add interest to the lesson and to provide material for a bulletin board display. A bulletin board display enables the pupils to become more familiar with the items at their own leisure.

A teaching plan for a lesson on "Products of Wire" follows.

PRODUCTS OF WIRE

I. Teaching Aids and Devices.
   Samples of galvanized wire, steel wire, brass wire, and copper wire. Steel wool, common nails, finishing nails, flat-head wire nails, and brads. Flat-head and round-head screws. Bulletin-board display.
II. Wire.
   A. History—as early as 800 B. C.
   B. Uses—160,000—name a few.
   C. Manufacture—all ductile metals—aluminum, brass, copper, gold, iron, silver, and platinum.
      1. Early method—by manpower—describe process.
      2. Modern method—
         a). Wire rod, pickling, sull coat.
         b) Wire-drawing machine.
         c) Die—sketch on blackboard.
         d) Sizes and shapes of wire.
         e) How sold.
III. Steel Wool.
   A. History—recent product.
   B. Uses—cleaning, polishing, and smoothing wood, metals, and plastics.
   C. Manufacture—a product and not a by-product.
      1. Cutting tool—sketch on blackboard.
      2. Grades.
      3. How sold.
IV. Wire Nails.
   A. History—as early as 1100 B. C.
   B. Uses—fasteners for wood, metal, plastics, hangers, marking, fencing, etc.
   C. Manufacture—
      1. Colonial method—demonstrate.
      2. Modern method—as many as 600 per minute.
         a) Wire straightened.
         b) Grip dies—studs—sketch on blackboard.
         c) Point cutters.
         d) Heading hammer—sketch on blackboard.
   D. Sizes, shapes, and kinds—900 varieties.
      1. Iron, brass, copper, galvanized, sterilized, blued, etc.
      2. Kinds—common, finishing, brads, and flathead wire nails.
      3. How sold.
V. Wood Screws.
   A. History—recent product—gimlet pointed.
   B. Uses—fasteners for wood, metal, and plastics.
   C. Manufacture—
      1. Early method—blunt point—threads filed.
      2. Modern method.

Figure 1.

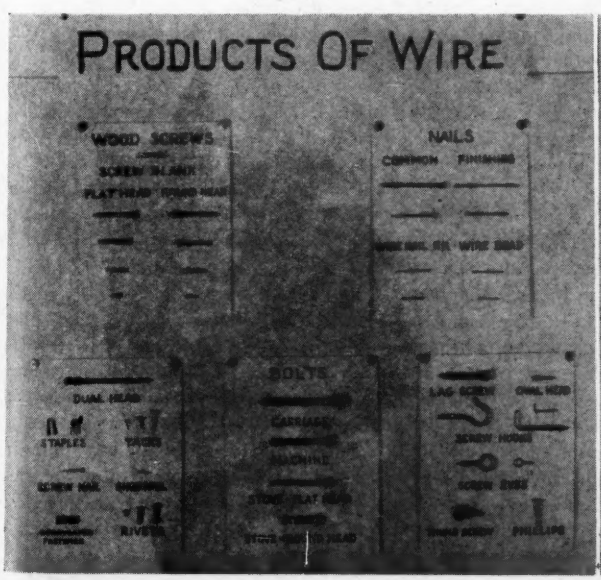
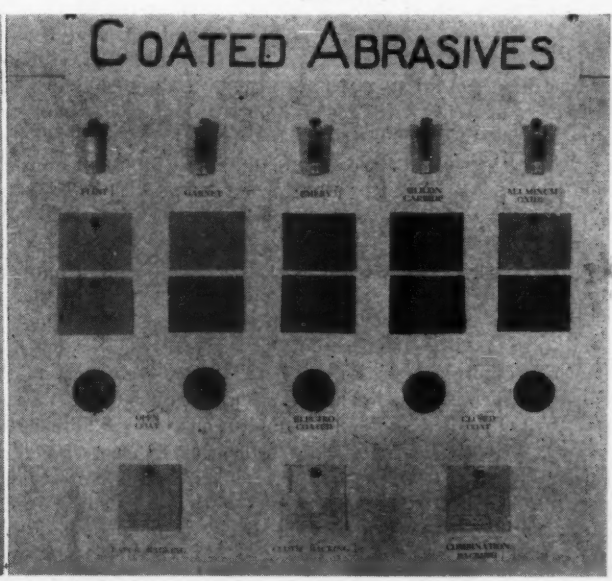


Figure 2.



a) Heading machine—cuts wire and forms head, called screw blank—sketch.
b) Shaver and slotter machine—shaves head and saws slot.
c) Threader and pointer machine—chasing tool.

D. Sizes and kinds.
1. Steel, brass, copper, bronze, blued, tinned, galvanized, nickelplated, etc.
2. Length, gauge, shape of head, and finish.
3. How sold.

VI. References.

Fryklund, Verne C., and Sechrest, Charles H., *Materials of Construction*, Milwaukee, Wisconsin: Bruce Publishing Company, 1943.
Compton's Pictured Encyclopaedia, 1927 ed., Vol. VI, Art., "Nails."
Enclyclopedia Britannica, 14th ed., Vol. XXIII, Art., "Wire."
Book of Steel Wool, London, Ohio: The Williams Co.

VII. Test.

1. How are nails usually sold?
2. What kind of nails are used for the interior trim of a house?
3. How are screws usually sold?
4 & 5. Name the two most common kinds of wood screws.

Identify: (Exhibit to the class)

6. Steel wool.
7. Flat-head screw.
8. Common nail.
9. Finishing nail.
10. Round-head screw.

True—False:

11. The hole in a die for drawing wire is tapered.
12. Steel wool is a by-product of wire making.
13. Studs on nails are made by the grip dies.
14. The slot in a screw is cut with a file.
15. Common nails have small heads.
16. Wire is made or drawn in many shapes and sizes.

VIII. Answers:

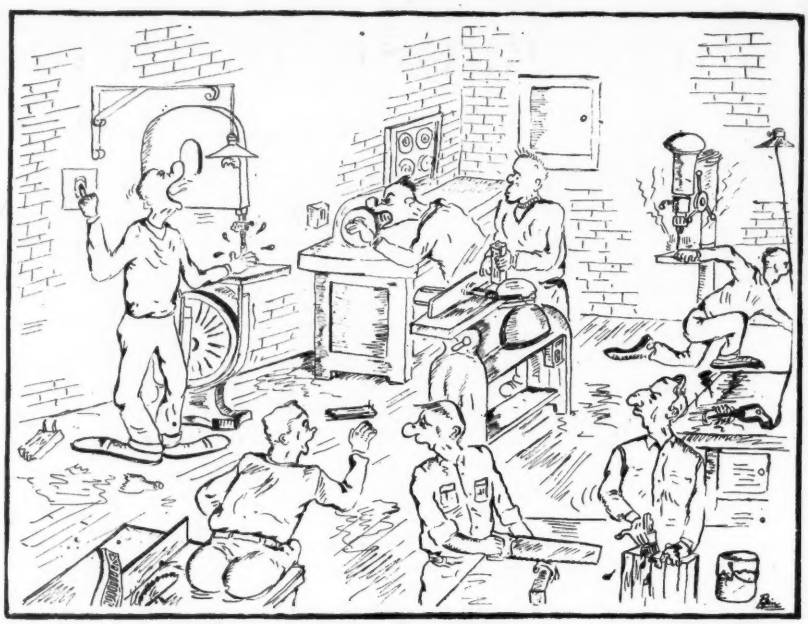
1. By the pound.	8. Common nail.
2. Finishing.	9. Finishing nail.
3. By gross or box.	10. Round-head screw.
4. Flat-head or round-head.	11. True.
	12. False.
5. Round-head or flat-head.	13. True.
	14. False.
6. Steel wool.	15. False.
7. Flat-head screw.	16. True.

An explanation of the teaching plan, "Products of Wire," will clarify some of the details. Under the first main topic, "Teaching Aids and Devices," are the aids and devices needed by the teacher to present the instruction. All such items should be arranged before the class enters the room because the fewer interruptions there are, the easier the attention of the group can be held. The bulletin board display listed under topic I is shown in Figure 1.

Under topics II, III, IV, and V are a series of subtopics. These subtopics serve as guides and as reminders to the teacher. The success of the test given at the conclusion of the lesson depends a great deal on how well these subtopics are covered.

What's Wrong with This Picture?

Drawn by Joe Papin, student of K. C. Wise, Westerville, Ohio, High School.



Here is a list of 15 things wrong in the picture. See if you can find them all plus several others: (1) Saw guard up. (2) Student sitting on saw table. (3) Student sawing hand. (4) Student painting carelessly. (5) Speed drill running without operator. (6) Band-saw guide too high. (7) Lower wheel guard on band saw open. (8) Broken light bulb over band saw. (9) Nails in boards on floor. (10) Broken bottles on floor. (11) No goggles on student buffing. (12) Student buffing with face too close to wheel. (13) Stock on jointer too small for end-grain jointing. (14) Band-saw teeth going in wrong direction. (15) No vise used on drill press.

Topic VI is references. Under references are listed the books and magazines that are in the school and shop libraries. These books and magazines are available to those pupils desiring to read more about a particular subject.

Topic VII is the test given at the conclusion of the lesson. A test at this time serves as a check on the effectiveness of the lesson and as an added stimulant to the pupils. Questions that require long answers should be avoided. When a question has more than one answer, all possible answers must be given when the test is corrected. The answers to the test are given under topic VIII.

Such information lessons may be prepared on a variety of subjects. The history and development of tools such as the plane and the saw make excellent lessons. For example, all of the common saws used in the shop may be collected and the history of the saw given as an introduction to the lesson. Then each saw may be exhibited to the class and its name, parts, and uses demonstrated. Nearly every school shop has eight or ten different kinds of saws.

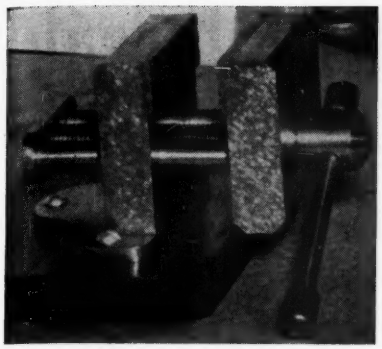
Another interesting and informative lesson may be given on coated abrasives. In Figure 2 is shown the bulletin board display used in conjunction with the lesson on coated abrasives. Five kinds of abrasive grains are shown and two samples of each kind of abrasive as it appears in the finished product. The three kinds of backings used for coated abrasives are also shown, as are the different kinds of coatings.

Some other materials that may be used for information lessons are paints and varnishes, iron and steel, lumber, tin plate, leather, rubber, glue, bricks, and glass.

Bulletin board displays add to the attraction of information lessons. In Figure 1 is shown the display used with the lesson, "Products of Wire." Items not so common, such as a dual head nail, a screw nail, a screw blank, and a corrugated fastener are added to the display to create interest as well as to inform pupils of such items. Other displays may be prepared by the teacher as shown in Figure 2.

The length of time that a bulletin board display should be exhibited varies with the situation. Generally, a period of two or three weeks suffices. If the pupils

(*Continued on page* 8)



Above—A bench vise that will attract the interest of any shop student.
Below—Plans for the vise.

TESTED 55 INSTRUCTIONAL PROJECT

Bench Vise

BY *R. E. Pickerrell*
AND *Glen Barkes*

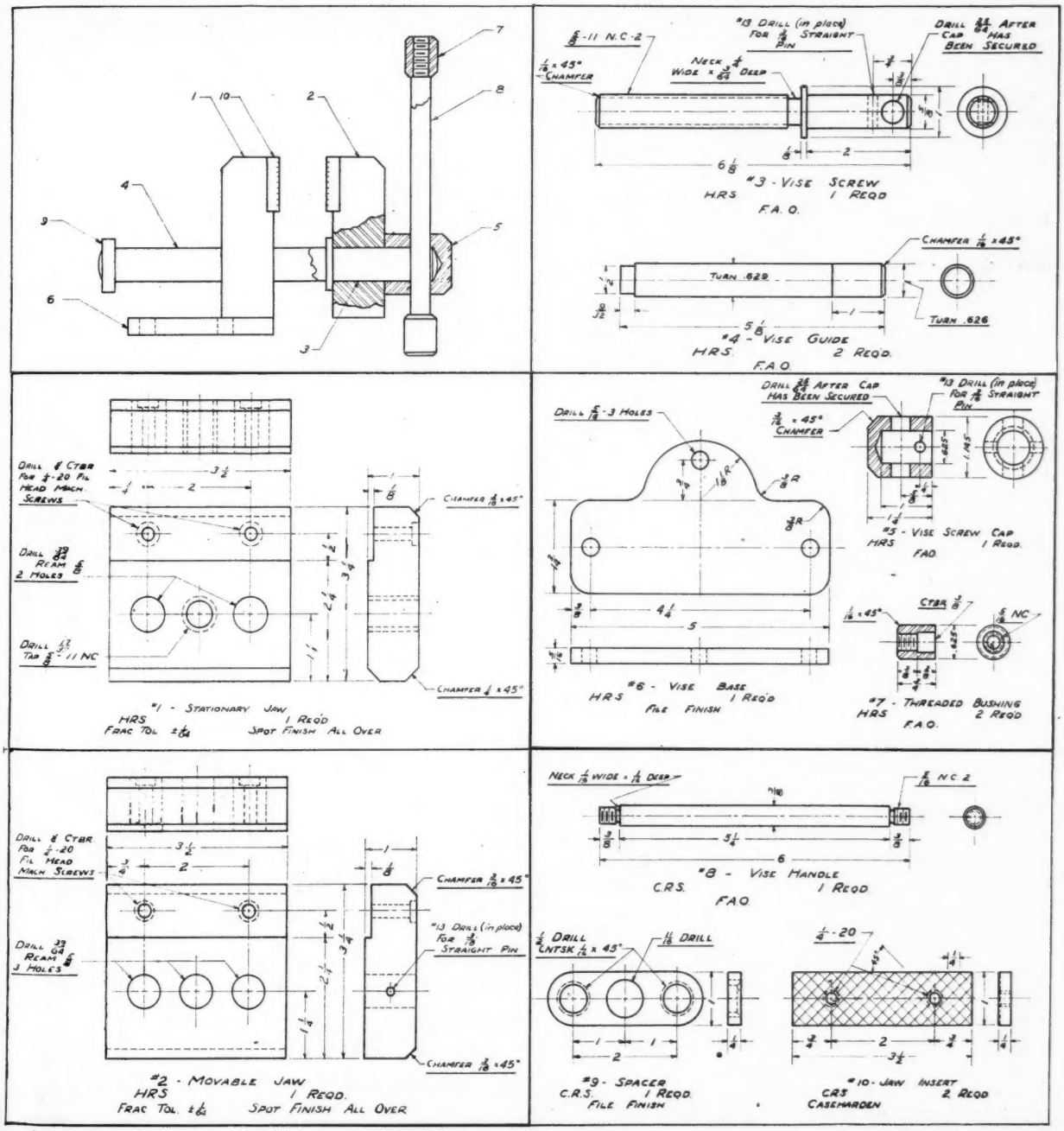
Designed for a specific instructional purpose, this machine-shop project fills the bill. R. E. Pickerrell is Instructor of Machine Shop and Glen Barkes is Director-Coordinator of Vocational Education, New Albany, Ind., Schools.

WHEN a boy (or man) begins to think of that "dream" shop in his basement, he always sees a nice long bench on which is mounted a practical vise. It is a "must" and takes priority over other equipment.

We have found that the motivating factor has been amply provided for both lad and dad when the construction of the vise shown here is contemplated. Also, we feel that the "means to the end" is educationally justifiable.

We are using this project in our second-semester machine-shop classes. Basically, we want these students to have experience in layout, bench, drill press, lathe and shaper work, and welding. The vise provides all of these operations at

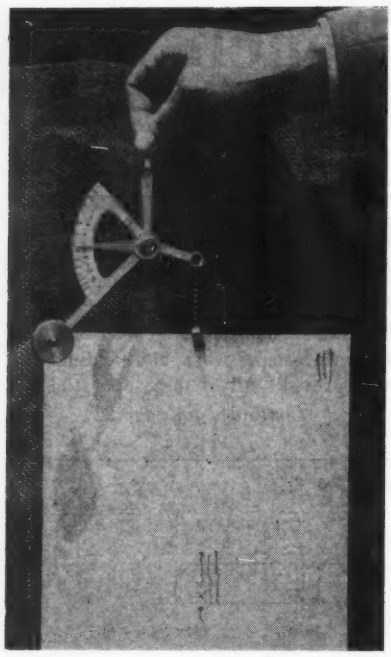
(*Continued on page 22*)


#1 - Stationary Jaw 1 Reqd
HRS Frac Tol ±1/64 Spot Finish All Over
#2 - Movable Jaw 1 Reqd.
HRS Frac Tol ±1/64 Spot Finish All Over
#3 - Vise Screw 1 Reqd
HRS F.A.O.
#4 - Vise Guide 2 Reqd.
HRS F.A.O.
#6 - Vise Base 1 Reqd
HRS File Finish
#7 - Threaded Bushing 2 Reqd
HRS F.A.O.
#8 - Vise Handle 1 Reqd
C.R.S. F.A.O.
#9 - Spacer 1 Reqd.
C.R.S. File Finish
#10 - Jaw Insert 2 Reqd
CRS Casehardened

Aluminum Postal Scale

BY *Clarence A. June*

Here is a project for students of elementary machine shop that will intrigue them and give the instructor an opportunity to teach many milling-machine and lathe operations. Clarence A. June teaches in the J. M. Wright Technical School, Stamford, Conn.



TESTED INSTRUCTIONAL PROJECT

THIS postal scale is an enlarged version of the type that may be purchased in most stationery stores. This size is convenient for determining the amount of postage required for large-size mailing envelopes that weigh more than the small scales will register.

The project is unique and useful, thus engaging the interest of students. Fabrication of the parts requires simple lathe and milling-machine operations.

Materials used for making the scale are optional but it is suggested that aluminum be used for parts 1 and 2 and that the remainder of the parts be made of brass.

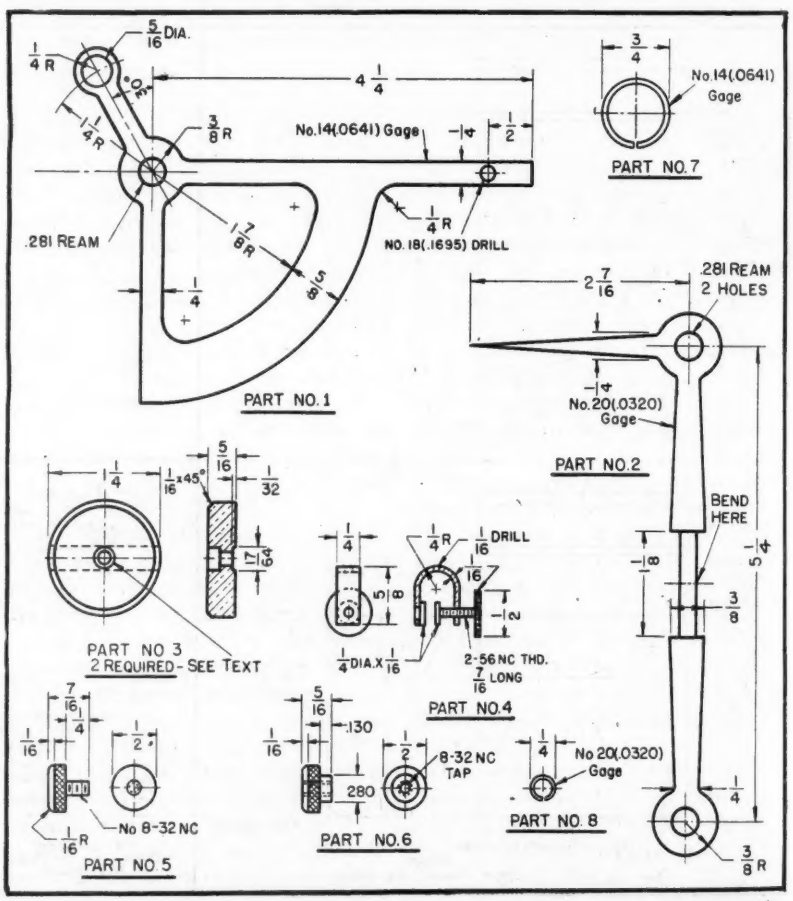
The drawing for part 2 shows the developed view. This part must be bent in the exact center after making and then the reamed holes must be machined so as to make a perfect alignment for the bearing (part 6). Two weights (part 3) are required. One piece is drilled and counterbored for a No. 8-32 N.C. fillister-head machine screw while the other piece is drilled and tapped for a No. 8-32 N.C. thread. Part 4 is used to hold the envelope securely while it is weighed. The yoke of part 4 is made first and then the small pad on the left, which has a ⅛" diameter shoulder, is press fitted on. The other pad on the end of the screw is drilled, tapped, and then soldered on, after inserting the screw into the yoke.

A short length of chain, 2½" to 3" long, can be obtained from an old pull-chain electric socket. It is soldered to the yoke by laying the ball of the chain on the 1/16" diameter drilled hole and allowing solder to run through the bottom side. The other end of the chain is soldered to the small ring (part 8) opposite the split opening. The small ring is then inserted around the 5/16" drilled hole of part 1 and squeezed together.

A clamp-on type of earring may be substituted for the yoke (part 4) with but a few minor adjustments and alterations being necessary.

Part 7, the large ring, is used to hold the scale and is inserted around the center portion of part 2. The split portion of the ring can be squeezed together after assembly.

The graduations are put on the scale after it is assembled. This may be done by scratching the lines directly on the metal arc of part 1 or a piece of paper may be cemented on and the graduations put on the paper. The scale should be graduated in one-ounce steps. With weights of the size shown in the drawing, the scale will calibrate about 14 ounces.

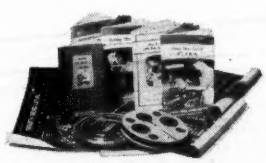


Information Teaching from page 6

have not studied it in that length of time, then in all probability they will not if it is left for a longer period. The display should be taken down and stored for future use. A glass covered board is better than an uncovered one because the display does not become soiled from the dust in the shop and from being handled by the pupils.

How long information lessons should be and how often they should be given depend on many factors. The aims of the course, the age of the pupils, their past experiences, their interests, and individual differences are factors that must be considered. In situations where pupils spend five or six hours per week in the shop, a lesson every third week does not seem too often. General information broadens one's scope toward vocational possibilities and has cultural values.

SOUTH BEND LATHES



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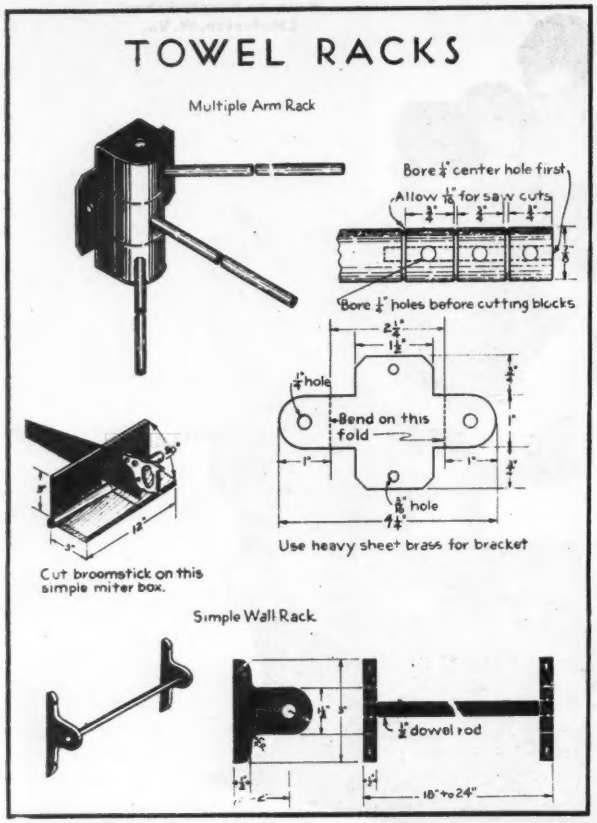
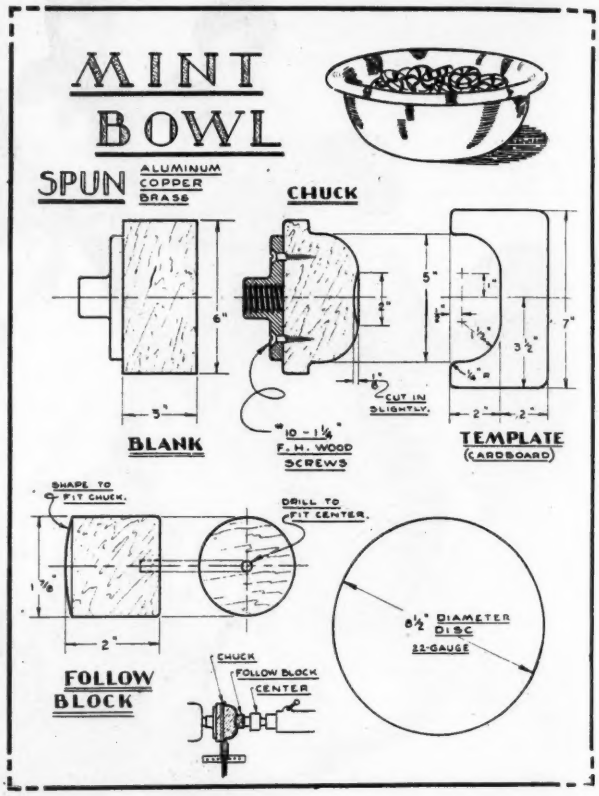
By *Louis V. Newkirk*, *Director of Industrial Arts, Chicago, Illinois, Schools*





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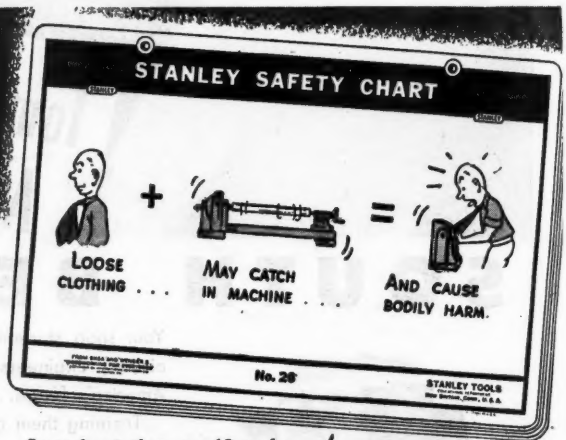

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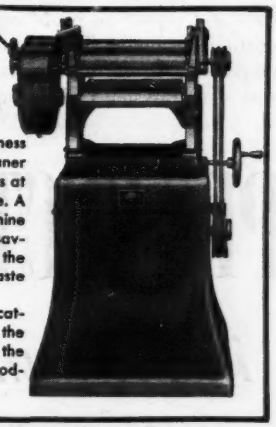

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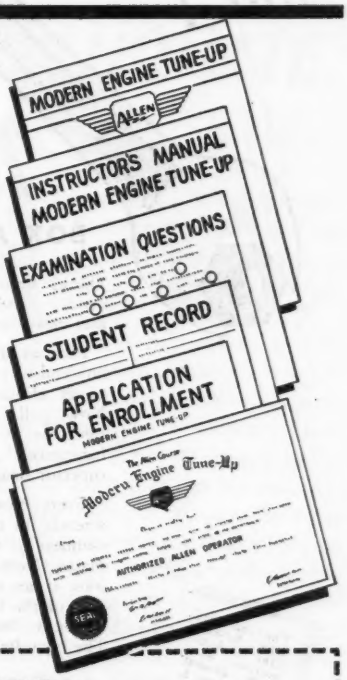

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NEWS

What's Doing in the Field of INDUSTRIAL EDUCATION

New Group Formed

A GROUP of vocational administrators met in Syracuse, N.Y., recently and organized the Association of Trade and Technical Administrators of New York State. The purpose of the organization is study and report on problems affecting vocational schools. The membership is composed entirely of representatives of local school systems. Edward H. Lang of Syracuse is president; Horace B. Griffiths of Utica, vice-president; Nelson J. Murbach of Batavia, secretary; and Ernest H. Colton of Rome, treasurer. Members of the executive committee are F. H. Wing of Buffalo, H. T. Wilson of Watertown, J. B. Lillie of Binghamton, W. Pabst of Brooklyn, and G. F. Pigott, Jr., of New York City. The group is affiliated with the National Council of Local Supervisors of Vocational Education. It plans to work in close cooperation with the State Education Department in the development of educational programs leading to industrial employment.

Printing Education Conference

THE 23rd Annual Conference on Printing Education will be held at the Hotel Pennsylvania, New York City, June 21-23, 1948.

N. Y. State Group to Meet

THE New York State Vocational and Practical Arts Association will hold its fourteenth annual meeting in Buffalo, N.Y., at the Hotel Statler March 29-April 1.

FRANK CAMPBELL, former teacher in the Henrik Hudson High School, Montrose, N.Y., has been named supervisor of industrial arts, New York State Department of Education. . . . JOHN B. THOMPSON, formerly of Santa Barbara State College, Calif., is now instructor in industrial arts at the State College of Washington, Pullman. . . . EVERETT GLAZENER has been named head of the industrial education department, Arkansas A & M College, Monticello. . . . WALTER L. FRILEY, professor of industrial arts, Kansas State Teachers College, Pittsburg, and former head of industrial education, Independence, Kansas, city schools, died recently at 64 years of age. . . . JAMES H. BAILEY has been appointed assistant professor of industrial arts at Central Michigan College of Education, Mount Pleasant. . . . ALEXANDER R. GRAHAM, director of the Madison, Wis., School of Vocational and Adult Education, died several weeks ago after a short illness. . . . ROBERT M. SHIELDS has been promoted to the headship of the printing department of Cass Technical High School, Detroit, Mich., on the retirement of RALPH W. POLK. . . . New members of the staff of the industrial-arts education department at the Oswego, N.Y., State Teachers College are DR. CECIL R. HUTCHCROFT, formerly of Colorado State College of Education; HAROLD GILBERT; and ARTHUR ROLL, teacher in New Jersey schools before army service. . . . H. H. MERRILL, former director of the Niagara School of Vocational and Adult Education, is now director of the Marinette, Wis., School of Vocational and Adult Education. . . . GLENN C. GORDON, formerly of the Hawken School, Cleveland, Ohio, is now head of the drafting department of Tomlinson Technical Institute, St. Petersburg, Fla.

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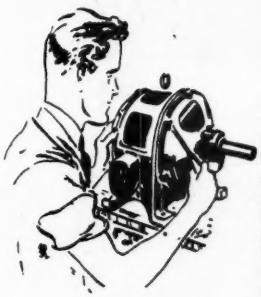

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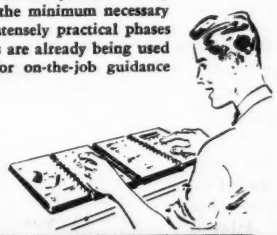

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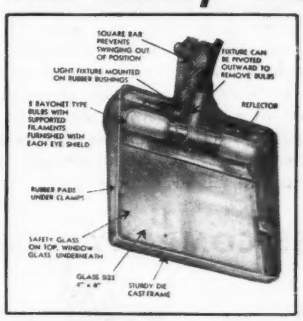
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5 BAYONET TYPE BULBS WITH SUPPORTED FILAMENTS FURNISHED WITH EACH EYE SHIELD
RUBBER PADS UNDER CLAMP
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School Shop KINKS

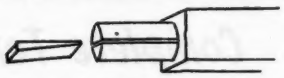
Payment will be made for each "Kink" published. Send to the Editor, School Shop, Ann Arbor, Mich.

Solder-Coated Wire

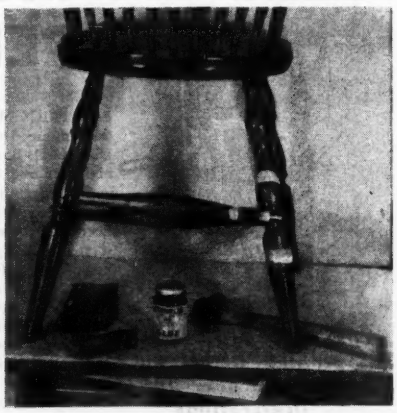
The boys in my classes save and bring in the pieces of wire that hold the outer cap on the milk delivered to their homes. This wire is about 9" long and is coated with solder. The boys use this wire to wrap around joints such as landing-gear wire for model airplanes. Using this type of wire makes soldering much easier.—*George McGinnis, Public Schools, Goshen, N.Y.*

Save That Chair

Wedging chair rungs is an excellent method to keep them from loosening because of shrinkage. Loosened rungs can be repaired and will remain tight for a long time. If the rungs are slightly under size, the wedge will spread them so that they will fit tightly.



The width of the wedge should equal the diameter of the rung and its length should not be less than that part of the rung that fits into the leg. A thin saw



cut is made the length of the rung end as shown in the drawing.—*William H. Freeman, Straubenmuller Textile High School, New York City, N.Y.*

No More Rolling

Do you ever feel like swearing
When some drawings you're preparing
So you lay your pencil down to take a rest;
Then just to make you sore
It rolls off upon the floor
And you pick it up to find the point a mess?
Well, here's a clever "kink"
That if followed out, I think,
Will keep your pencil points from breaking on the floor
Take an unemployed thumb tack,
Jab it in the pencil's back,
And it won't roll off the table any more.

—*Frederick N. Newton, Jr., Director of Industrial Education, Sharon, Pa.*

Wanted—Teaching Kinks

SHOP teachers are urged to send in brief descriptions of kinks and short cuts which they have found helpful in their shop. Send to the Editor, SCHOOL SHOP, Ann Arbor, Michigan. Payment will be made for each kink published.

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Precision Built for Precision Workmanship

NEW — from its large, precision-ground table to its extra-heavy base . . . built to exacting industrial standards for school and commercial shops . . . designed for easier, more accurate cuts on all types of stock . . . that's the new Atlas 10" Tilt/Arbor floor saw!

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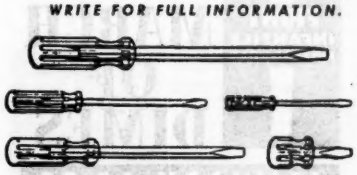

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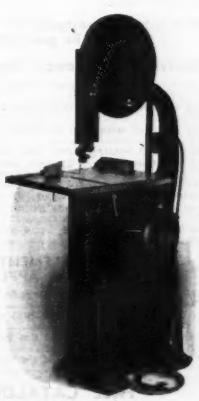

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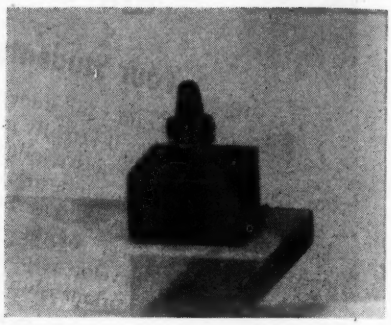
Unique Ink-Bottle Holder

BY *Arthur F. Schuster*

Correlating the work of the mechanical drawing department with the shop is easily done, through the construction of this project which is designed for elementary students in industrial arts. Arthur F. Schuster teaches at the Charles B. Gaskill Junior High School, Niagara Falls, New York.



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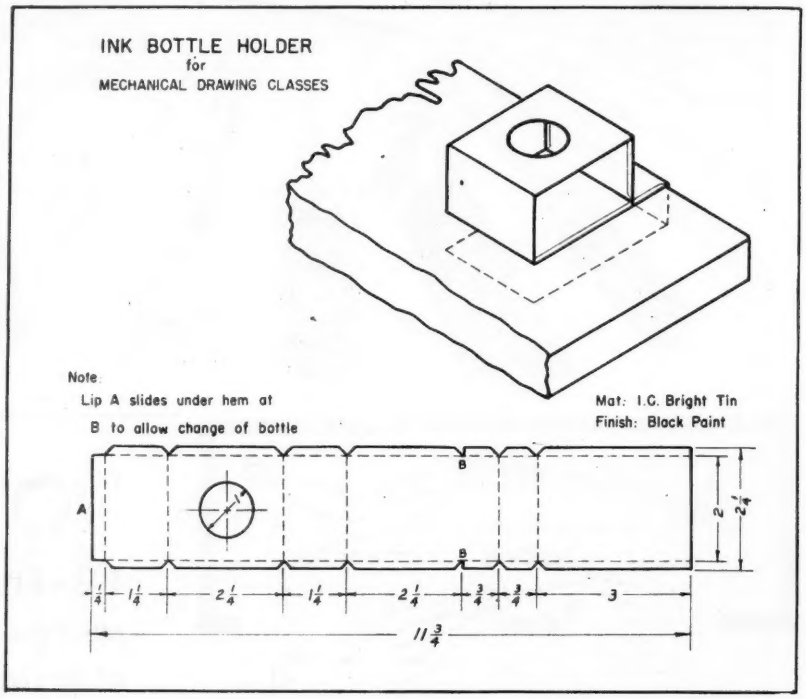
THIS ink-bottle holder has been very successful as a project and in use, as it prevents the spilling of ink in the drafting room.



It has a number of features to commend it. The project is simple to make, yet allows for the teaching of a number of operations and industrial procedures. The ink bottle can be readily replaced and the bottle is always kept in one position so that it cannot be knocked over or slide if the drawing board is moved. The holder can be fastened either to a drawing desk or to a drawing board.

The ink bottle holder gives the instructor the opportunity to correlate the work in mechanical drawing and the shop. It can be either an individual or a group assignment. Junior-high-school classes can complete the project readily and in a reasonably short time.

The simple drawing layout can be made and understood by elementary students. The cutting and bending of the metal is within the scope of such students.

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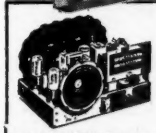

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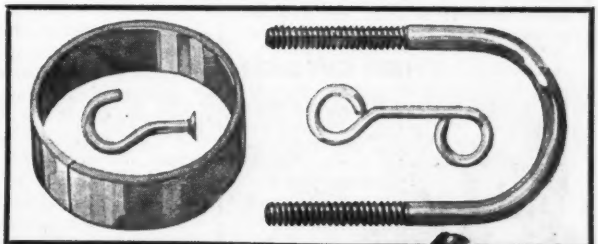

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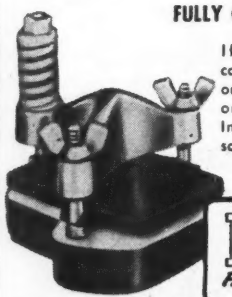

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Instructional RESOURCES

Working with Plexiglas. Philadelphia: Rohm & Haas Co., 1947. Pp. 72. $1.50.

This spiral-bound manual of how-to-do-it operations with Plexiglas will be most useful to the industrial-arts teacher wishing to introduce or extend the class offerings in working with acrylic plastics. As the title indicates, the emphasis in the volume is on the practical with no space given to related information. Subjects covered include cleaning, cutting and machining, finishing operations, forming, joining, and design. There is a useful section showing project designs and a helpful list of suppliers of materials and equipment. The volume is profusely illustrated with line drawings that are tied in directly with the text.

Aircraft Welding. Drake. New York: The Macmillan Co., 1947. Pp x+254. $4.00.

Written in nontechnical language, this book is intended to contain all the information and instruction needed to fulfill the welding requirements for an aircraft mechanic's license. The theory underlying the production of a successful weld is explained as well as information on the properties and characteristics of the different metals and alloys. All types of welding used on aircraft are covered with step-by-step instruction. Full details are given on welded repairs, including those types approved by the Civil Aeronautics Administration under its licensing regulations. Useful chapters are included on related matters such as technical drawings for welds, blueprint reading, safety practices, and the vocabulary of welding. A number of drawings and photographs help to make the text meaning clear.

Colonel Rollen H. Drake is a research engineer and former aviation instructor in the Los Angeles, Calif., schools.

An Introduction to Engineering Plastics. Brown and Harris. New York: Murray Hill Books, Inc., 1947. Pp. viii+274. $4.00.

This book is a technical presentation of engineering problems encountered in plastics production work and will interest teachers of courses in plastics for vocational students. The authors describe the various thermoplastic and thermosetting materials and their chemical and physical properties; engineering tests and specifications; laminates; fillers; adhesives; molds and molding process; metal coating, welding, and high-frequency heating of plastics. Equipment data is given as well as a list of materials and recommended tolerances.

D. Warburton Brown is a British engineer and Wilbur T. Harris is chief research engineer for U. S. Time Corp.

Electricity: Principles, Practice, Experiments. Siskind. New York: McGraw-Hill Book Co., Inc., 1947. Pp. ix+448. $2.60.

The purpose of this book is to present the general elementary principles of d-c and a-c electricity, to show how these principles apply to the construction and operating characteristics of the more common types of circuits, devices, and machines, and to illustrate how these principles may be verified through simple experiments. The book is intended for high-school and technical-institute classes so the mathematical treatment has been limited to arithmetical and algebraic operations. A summary is given at the end of each chapter along with questions and problems on the chapter. A help to the teacher is a list of visual aids covering the work in each chapter. Detailed instructions are given for the construction of various electrical devices which can be used as projects in electrical shops. An appendix contains brief biographical data on scientists who have contributed to electrical knowledge.

Charles S. Siskind is Assistant Professor of Electrical Engineering, Purdue University.

Employment Outlook in Printing Occupations is Bulletin No. 902 of the Bureau of Labor Statistics of the U. S. Department of Labor. Prepared by the bureau's Occupational Outlook Service as an aid in helping young people and veterans to make a choice of an occupation, the report contains a detailed analysis of the employment situation in the individual printing occupations. It also gives information on the wages, training requirements, and duties of each job. Available from the Government Printing Office, Washington 25, D. C., for 20c.

Sailplane is a 16mm sound motion picture in color or black and white which demonstrates the thrills, beauty, and safety of motorless flying. Scenes and narration take the viewer through complete take-off, soaring, and landings. Other step-by-step sequences touch on construction, assembly, safety features, and wind currents. Running time is 11 minutes. Produced by James H. and John W. Love. For information write Simmel-Meservey, Inc., 321 South Beverly Drive, Beverly Hills, Calif.

Building a Home with Western Pines is a 16mm sound film which portrays in step-by-step fashion the construction of a frame dwelling. All topics are covered from framing to interior finishing. Running time is about 25 minutes. Prints may be borrowed without cost except for transportation charges one way from the Western Pine Association, Yeon Bldg., Portland 4, Ore.

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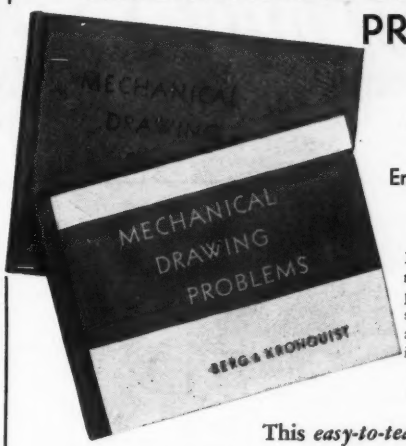

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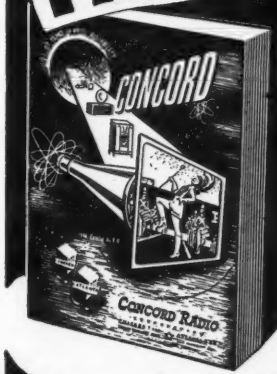

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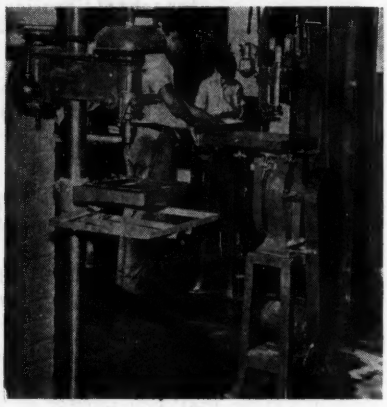

FERROX Anti-Slip Troweling Composition provides an economical yet completely satisfactory slip preventive for use around machinery and in front of work benches in the school shop. This product is a plastic-abrasive composition and is made by American Abrasive Metals Co. of Irvington, New Jersey. It will adhere to metal, concrete, or wood surfaces and may be applied by anyone who can handle a trowel. Where principally foot traffic is encountered, it provides a highly serviceable, low-cost safety surface.

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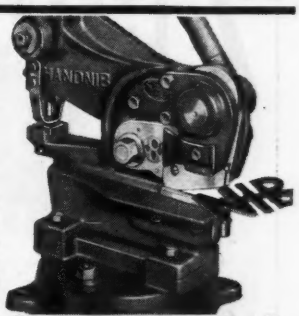

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From Washington . *from page 24*

studies teachers became confused and asked: What shall we teach about Russia? "Teach that we are friends with Russia," said the American Legion in effect, "but stress that we have and will continue to have a mighty armed force ready at all times."

Two years after the atom bomb fell, the high schools were promised a "unit of study" to teach pupils how the split atom will change our lives. Unesco, trying to find concrete ways to bring peace through education, was told that all nations should stop manufacturing toy soldiers and play guns since these inspire militarism. The organized toy industry, which sold $250,000,000 of its products during the year, replied that guns are still best-sellers—but so are dolls, especially "magic skin" dolls.

Architects (the radical ones) urged that we stop building school plants modeled on ancient Greek and Roman temples and build instead series of workshops where children can learn to play, live, paint, work, and get along with each other.

A fringe of enthusiasts were still claiming that motion pictures, radio, and film strips could enrich teaching. The vast army of teachers stuck to teaching from their textbooks.

English teachers were debating whether to drop the apostrophe (in such words as teachers pet); and still forced most pupils to read *Ivanhoe*, a foreign novel about a forgotten era.

Geography teachers discovered that nearly three-fourths of the facts they were teaching about the British Empire were no longer true. Great Britain was becoming a dependency of the United States. (Those who question that statement should read Herbert Matthews series of articles in the New York *Times*.) Dramatic teachers discovered that play-acting helped delinquents, and some wags were saying that in the future bad boys may be sent to the drama teacher instead of to the shop teacher.

Bench Vise . . . . . *from page 7*

a level the relative beginner can master.

During the first semester, experience in most of the above operations is gained by furnishing stock (considerably oversize) for the guide rods and moveable jaw. The student realizes that ultimately this stock will become part of his vise. (He is shown a finished vise and also a set of plans.) By reducing this stock according to specifications in two or three steps, he learns machine operation and to work to close dimensions. Welding practice is also provided on simple auxiliary projects.

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The vise is simple, yet rugged, in construction. Heavy machine tools are not required and the average general metal shop can utilize it as a project. No castings are required, allowing its use where a foundry is inaccessible.

The drawings are selfexplanatory. We weld the stationary jaw to the base. However, it could be secured with machine screws where welding equipment is not available. In this case, the chamfers shown on the lower part of the jaw would be omitted.

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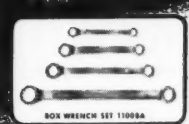

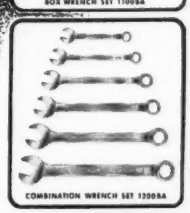

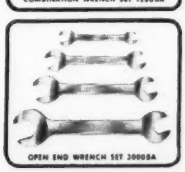

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FROM WASHINGTON

BY MICHAEL PACA

1947 in Retrospect

NOW at the year's beginning, here are a half hundred facts about the year just past which school shopmen may have missed:

It was a year of prosperity and of crackling, fresh $20 bills. Retail stores sold one hundred billion dollars worth of goods to customers and factories strained hard to keep the store shelves full. The people, through their state lawmakers, gave teachers a collective pay boost of three hundred million dollars during the year, and felt satisfied. They were not impressed that inflation was making zeros out of these pay raises.

The year 'round, radio stations broadcast spot announcements ("one billion and a half listener impressions") designed to raise teachers' prestige and magazines published full-page, 4-color ads glorifying schools. Business men, who see in advertising cures for all ills, were behind these campaigns, and education was grateful.

The popular magazines continued to carry articles on education. But their tone changed. Instead of playing up the plight of teachers, the articles now charged that the schools were failing to give youngsters a good start in life, were failing to inculcate in pupils a desire for peace and to develop habits for industriousness and clear thinking.

Morale of superintendents sank low. They were feeling the pressure of taxpayers who wanted better schools for their money. They also felt the force of organized teachers, probably for the first time. Teacher locals, affiliated with the NEA or independent of it, were booming in number and gaining in power. More than five thousand locals were laying plans to get better working conditions. The superintendent was welcomed as a member in the teacher organization but he had only one vote.

Some school executives discovered that problems in education were becoming too big to be solved by a single school system. They banded together into regional cooperative study and action groups. As many as one hundred school systems frequently pooled their resources to solve a problem—and they discovered that this scheme brought results.

Men at Work—in College

In a year of prosperity men are usually at work, making money, while girls go to college. 1947 was different. Men were at college and women at home. No nation has ever been able to keep 2,300,000 able-bodied men in classrooms and at the same time keep its economy going. We were doing just that in 1947—and will continue to do it in 1948.

Negroes, impatient with the progress the South was making to provide good (separate) schools for their children, went to the courts to force admission of colored youth into white public schools. The South was unworried, because it knew the cases could be tied up in the courts for a generation. To train Negroes for professional and technical jobs, southern governors proposed a chain of segregated regional schools, but Negroes said: "No. These will only perpetuate Jim Crow, and that's against the principles of the President's report on Civil Rights, to mention only one document of freedom." That same report, incidentally, said that vocational schools discriminate against Jewish pupils. "We have no evidence and no complaints to support such a charge," replied the B'nai B'rith Jewish Vocational Guidance Bureau in Washington.

The Marshall Plan

Flying in an airplane over Greenland, Secretary of State Marshall got the inspiration for his plan to help rebuild Europe. When Mr. Marshall told the world about it, the Russians said we were trying to turn Europe into a green pasture for Wall Street businessmen. Nevertheless, the United States went ahead with plans to send missions of aid to countries all over the world. These missions will need the backing of schools and colleges because they will need crews of geographers, linguists, technicians, farm specialists, experts in foreign affairs, and economists. Education was slow to hitch on to the Marshall plan. Some educators even played with the slogan: "Shall we save Europe and lose America?" The implication was: Let's first strengthen our public schools by spending half a billion more on federal aid . . . then we shall be in a better position to try to rebuild Europe.

Few issues of concern to education were settled in 1947. That is why the coming months will again echo and reecho with arguments for and against federal aid to education; for and against military training; for and against the use of public money to support some phases of parochial schools; for and against teachers' labor unions.

High hopes of educators to get large stocks of usable surplus property were unrealized. Surplus stocks abroad, however, were about to yield benefits for American education. Under the Fullbright Act, these stocks were being sold to foreign governments and the money used to send American students overseas. First contingent will probably leave October, 1948.

Here and There in the Schools

America discovered that Russia was teaching its pupils to love their fatherland and to hate capitalism. Our social-

(*Continued on page 22*)

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